Symons's
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Sir John Murray, K.C.B., F.R.S.

1841—1914.

John Murray, the famous naturalist and the world's leading authority on oceanography, was born at Coburg, Ontario, Canada, on March 3rd, 1841. His father was Robert Murray, who took an active part in Canadian politics. He received his early education in the Dominion, but having in 1858, when 17 years old, removed to Bridge of Allan in Scotland, he continued his education at the High School, Stirling, and at the University of Edinburgh, where he studied under Tait, Allman, Masson, Turner, Clerk Maxwell, and Lyon Playfair, and where he was associated as a student with such men as Robertson Smith, John Jackson, Robert Louis Stevenson, and others, who subsequently became famous in different walks of life. He also studied in France, Germany, and Belgium. For several years he helped his relative, John Macfarlane, of Coney Hill, in the formation of a large Natural History Museum at Bridge of Allan, and in 1868 he visited Spitzbergen and the Arctic Regions as a naturalist on board a Scottish whaler.

Four years later, in 1872, Murray entered upon the great enterprise with which his name will always be identified. In that year he was appointed one of the naturalists of her Majesty's ship *Challenger* during her circumnavigating voyage, 1872-76, for the exploration of the physical and biological conditions of the great ocean basins. In 1876 he became first assistant on the staff created by the Government to publish the scientific results of the Expedition, and when Sir Wyville Thomson died in 1882 he was installed as director and editor of the *Challenger* papers. These documents were most voluminous, running as they did to some fifty large royal quarto volumes, containing 29,500 pages, and illustrated by more than 3,000 plates and charts. Three furnish a narrative of the cruise, two deal with physics and chemistry, one with deep-sea deposits, two with botany, forty with zoology, and two gave a summary of results. Seventy-six scientists were engaged in its preparation. The whole of the collections were forwarded to Edinburgh, whence they were distributed for examination to the scientific experts. The editorial duties were entirely discharged in the city, and 32, Queen Street, where the Challenger Commission had its office, was for several years

frequented by the men of science from various parts of the world who were engaged in carrying out the work.

In a closing note to these immense labours, Murray summed up concisely his connection with the famous voyage of discovery. "In June, 1872, I was," he says, "appointed one of the naturalists of the *Challenger* when the Expedition was being fitted out. During the past twenty-three years my time has been wholly taken up with the work of the Expedition and in the study of those subjects which the Expedition was organised to investigate. The direction of the whole of the work connected with the publication of the scientific results passed unexpectedly into my hands, and I have done my best in the circumstances to place on permanent record a trustworthy account of the labours of this famous Expedition. It has been my earnest endeavour to complete the publications in a manner worthy of the naval position and scientific reputation of this great Empire. Notwithstanding the troubles, personal sacrifices and regrets necessarily connected with the work, it has been a pleasure and an honour to have taken part in explorations and researches which mark the greatest advance in the knowledge of our Planet since the celebrated geographical discoveries of the Fifteenth and Sixteenth Centuries." In 1880 and in 1882 he was in the *Knight Errant* and *Triton* Expeditions for the exploration of the Faroe Channel, voyages undertaken to supplement scientific facts ascertained on the *Challenger*.

From 1892 to 1894 he conducted many observations in the steam yacht *Medusa* on the physical and biological conditions of the lochs and seas of Scotland, founding and supporting marine stations for scientific research at Granton near Edinburgh and at Millport.

He also entered with great spirit into the project for establishing a meteorological observatory on the top of Ben Nevis, and became secretary of the Committee appointed to raise the funds. Largely through his enthusiasm £5000 was collected in a short time, and he superintended the erection of the buildings and the construction of the road to the top of the mountain. For many years he was vice-president and one of the secretaries of the Royal Society of Edinburgh, and served continuously on the Council of that Society for about twenty years. Sir John was associated with the Council of the Royal Scottish Geographical Society from its foundation in 1885, and acted as president from 1900 to 1904. During the same period he was president of the Scottish Natural History Society, and gave to that Society several grants to enable it to commence a scientific description of the valley of the Forth.

In the late nineties Sir John warmly advocated a renewal of Antarctic research, and his addresses on the subject did much to forward the organization and despatch of the expeditions that have taken place in recent years.

One of the most interesting of Sir John Murray's researches was a survey of the fresh-water lochs of Scotland. The Royal Societies of London and Edinburgh having in vain solicited the Government of

the day to undertake a bathymetrical exploration of these waters, Sir John Murray and Mr. F. Pullar—and after his death, his father, Mr. Laurence Pullar—executed the work. Mr. Pullar provided the greater part of the funds, and now some hundreds of Scottish lochs have been thoroughly examined, and the series of reports published in six volumes.

In conjunction with Dr. Johan Hjort, Sir John recently published a monumental work on the "Depths of the Ocean," in which was incorporated the practical results of deep-sea methods, derived from his last expedition, that on the *Michael Sars* in 1910.

Sir John took a deep interest in Meteorology, and from 1882 to 1909 served continuously on the Council of the Scottish Meteorological Society. He became one of the Trustees of the British Rainfall Organization in 1910. In this connection, Dr. Mill wrote: "Sir John Murray, of the *Challenger*, represents Scotland, and he represents also the sciences of the Earth's surface as no other man in the world could. To him, a friend of nearly 30 years' standing, I owe the best part of my scientific training, and his agreeing to take up this duty is a greatly valued expression of confidence on the part of the one man who knows all my scientific work from the beginning."

Sir John received honours innumerable from all parts of the world. He was created K.C.B. in 1898, and in the same year was made a Knight of the Prussian Order Pour le Mérite.

Sir John was a familiar figure both in Edinburgh and London. His bluff and hearty manner, breezy and redolent of the ocean on which so much of his life was spent, combined with his physical activity and mental alertness, were assets that made him welcome in whatever society he cared to move. His strong personality, his genial nature, and his keen sense of humour, made him hosts of friends, even among those for whom science had no attractions.

The accident which brought his life so suddenly and tragically to a close on March 16th, when motoring within a few miles of his Edinburgh home, overtook him in the full plenitude of his powers. Although three years past the allotted span, it seemed to his friends that many years of activity and usefulness lay before him, which accentuates the deep feelings of regret universally felt at his untimely death. R.C.M.

The Hon. Francis Albert Rollo Russell.

1849—1914.

We regret to announce the death in London, on March 30th, after a short illness, of Mr. Rollo Russell, of Steep, Petersfield. Born in July, 1849, he was the third son of the first Earl Russell, and was educated at Harrow and at Christ Church, Oxford. He was interested in the study of Meteorology and was the author of various publica-

tions, many of which were on meteorological subjects. He contributed in collaboration with the late Douglas Archibald, the chapter on "Sun Glows" to the Report on the Eruption of Krakatoa, and in 1893 published a work on "Hail," which he dedicated to his friend, Mr. Symons. He was also the author of various works in the domain of medico-climatology, and last year "The Early Correspondence of Lord John Russell" appeared from his pen. The Smithsonian Institution some years ago awarded him a silver medal for an essay on "The Atmosphere." He was one of the oldest Fellows of the Royal Meteorological Society, having been elected in 1868, at the early age of nineteen, and was a familiar figure at the meetings of that body. At the time of his death he was a member of Council of the Society, and was Vice-President in 1893 and 1894.

ROYAL METEOROLOGICAL SOCIETY.

THE monthly meeting of this Society was held on Wednesday evening, the 18th March, at the Institution of Civil Engineers, Great George Street, Westminster, Mr. C. J. P. Cave, President, in the chair.

Professor A. C. Seward, F.R.S., of Cambridge, gave a lecture on "Climate as Tested by Fossil Plants." Problems connected with the climates of past ages have long exercised the minds of scientific writers, both from an astronomical standpoint and from the point of view of the gradual development and wanderings of plants and animals since the earliest periods that have left recognisable records. An estimate of the value of plants as "thermometers of the ages" necessitates an inquiry into the power of acclimatisation of recent plants and their ability to respond to external stimuli; a comparison of land and water plants illustrates the plasticity of vegetative organs and the intimate relation between form, structure, and environment; similarly plants growing in dry places, or under other conditions unfavourable for the absorption of water, are characterised by certain structural features reflecting the circumstances in which they live. A comparison of individuals of the same species grown at high altitudes, at lower levels, or before continuous light, afford striking evidence of the power of adaptation. The difficulty of using fossil plants as tests of climate becomes increasingly great in proportion to the degree of difference between the extinct types and their nearest living relations. It is from the examination of petrified plants, the delicate tissues of which are almost perfectly preserved, that data may be obtained throwing light on climatic conditions. This method of inquiry is best illustrated by a consideration of some of the anatomical features of the leaves, stems and roots of trees which grew in the forests of the coal period; the form and arrangement of cells in the leaves indicate fairly bright sunlight; large spaces in the cortex of roots point to growth in swamps. The geographical distribution of plants during the latter part of the Palæozoic era affords evidence

of the existence of two botanical provinces, a northern province characterised by a luxuriant flora living under conditions more genial than those to which the poorer flora of the southern hemisphere was exposed. The presence or absence of rings of growth in the petrified stems of plants may afford evidence of the occurrence or absence of seasonal changes. A general survey of the Jurassic flora of the world leads to the conclusion that the climate was comparatively uniform, and in Arctic and Antarctic regions much more genial than at the present day. The fossil floras of more recent geological periods furnish clear evidence of sub-tropical conditions in Europe; in later times the occurrence of northern types in Britain heralds the approach of the Glacial period, and in post-glacial beds are found fragmentary remains of immigrants from neighbouring floras which have largely contributed to our present flora.

On the motion of Dr. H. N. Dickson, seconded by Captain H. G. Lyons, F.R.S., a hearty vote of thanks was accorded to Prof. Seward for his interesting and instructive lecture.

The following gentlemen were elected fellows of the Society :— Mr. E. W. Bliss, B.Sc., B.A., Mr. Ernest H. Chapman, M.A., B.Sc., Mr. Christopher Ogle, A.C.A., M.A., Mr. Archibald Pitkin, F.R.G.S., Capt. Harry Trowbridge, Mr. Reginald Vaughan, B.A.

THE WEATHER OF MARCH.

THE outstanding feature of the weather of March was the continued prevalence of unsettled, stormy, rainy, gloomy conditions in all parts of the United Kingdom. During the first ten days of the month the exceptional mildness that characterised February was again very pronounced, being most noticeable in the Southern half of England, including the Channel Islands, while in the North and East of Scotland temperature was but little in excess of the normal. During the last three weeks in nearly all districts temperature was under the average, but no severe cold spell was experienced. During the greater part of the month pressure was high in the Azores and in Iceland, an almost constant succession of depressions advancing directly over the United Kingdom. So exceedingly unsettled was the weather that there was rarely an interval of 48 hours in which gales or strong winds were not reported from some portion of the British Isles. In spite of the persistent rainfall there were few heavy daily falls reported, even in districts where amounts of 1·50 in. and upwards in the 24 hours are relatively common.

At the beginning of the month the thermometer rose to between 50° and 55° in many parts of our Islands, and during the first ten days hardly any frost was recorded. On the 6th a maximum of 59° was recorded at Southampton. On the 3rd, heavy rain fell in some western districts, the maximum falls reported being 1·85 in. at Rhiwbryfdir, and 1·74 in. at Delphi Lodge, Co. Mayo. On this day Poltalloch experienced a thunderstorm, while at some northern stations there was lightning only.

On the 5th when a new depression was approaching the north-west of Ireland further heavy rains were recorded, 1·92 in. at Rhiwbryfdir, 1·70 in. at Oughtershaw, and 1·23 in. at Invergarry. On the 8th, when a large low pressure area lay over Ireland and the adjacent parts of Wales, considerable quantities of rain fell very generally in the south and east, the maximum fall reported being 1·81 in. at Oaklands, Okehampton. At Studland, Dorset, 2·20 in. fell on the 9th, and at Totland Bay on this day 1 02 in. fell in six hours. About this time sharp frost was experienced in most districts, temperature in Scotland falling to 16° at Balmoral, and 22° at Fort Augustus on the 9th, and to 17° at West Linton on the 11th.

During the twelve days ending the 24th, the weather continued in a very unsettled condition with frequent strong winds and gales, accompanied in some cases by sleet, snow, hail and thunderstorms. Rainfalls exceeding an inch occurred almost daily during this period but few cases exceeding 1·50 in. were noted. On the 14th Blaenau-Hydfer recorded 1·54 in., and Shiel 1·65 in. On the 19th Old Garroch measured 1·64 in., and on the 24th Borrowdale Grange had 1·77 in. An easterly gale prevailed in Shetland on the 25th. Towards the close of the month the weather became much warmer, the temperature rising to 60° at Southport on the 30th, while on the last day of the month 65° was recorded at Lowestoft and Teignmouth, and 64° at Margate and Ilfracombe. During the last week some heavy daily rainfalls occured the maximum being noted at Rhiwbryfdir on the 30th when 2·11 in. fell. At the close of the month an exceptionally long rain spell remained unbroken in Ireland. At Darrynane, for example, March 31st was the 69th successive day with rain.

The general rainfall of the month expressed as a percentage of the average was: England and Wales, 185; Scotland, 123; Ireland, 164; British Isles, 161.

THE WETTEST MARCH IN LONDON IN 57 YEARS.

THE rainfall of last month at Camden Square amounted to 4·51 inches and was by far the heaviest recorded in March in 57 years over which the homogeneous rainfall record extends. Only on four previous occasions has the rainfall of March exceeded 3·00 inches, the previous highest fall being 3·69 inches in 1862. Rain fell on 25 days during the month and this number, though equalled in 1896 and 1909, has never been exceeded in March. Rain was actually falling for 102·4 hours which also constitutes a record for March during the 34 years in which records of duration have been kept up. The greatest duration previously recorded in the month of March was 94·0 hours in 1909. Only one month in the whole record had a greater duration than March 1914, viz. October, 1882, when rain fell for 103·5 hours. The only other instance of a duration of 100 hours in a month was June 1903 with 102·2 hours.

Correspondence.

To the Editor of Symons's Meteorological Magazine.

METEOR OF JANUARY 19th.

I HAVE just read the note, with much interest, in the Magazine for February with reference to the brilliant meteor seen by Captain Chrystie, at Farnham, on January 19th. We also saw this phenomenon as we were proceeding, westerly, along the road between Midhurst and Petersfield, we were at a point about 16 miles due south of Farnham a few minutes after 7 p.m., and had a splendid view. The passage of the meteor was very obvious, and commenced almost on our right (over Farnham) and extended in a W.S.W. direction. The effect near at hand was very pronounced, the whole area about us being brilliantly lit up, rendering objects some distance away clearly visible.

Had I not seen the passage of the meteor I might have thought a strong searchlight had suddenly been directed upon us.

E. J. PLATT.

The Gardens, Borden Wood, Liphook, Hants, March 7th, 1914.

A NEW LOW RECORD OF THE BAROMETER IN NEW YORK.

THE great blizzard of the 1st and 2nd March was chiefly remarkable for the lowness of the barometer. At 8 p.m. on the 1st the barograph showed a reading of 28·39 in., breaking the record of January 13th, 1913, which was 28·60 in.

The original disturbance was first located over the East Gulf States with a centre of 29·66 in. Moving rapidly in a north-easterly direction it gained in intensity as it proceeded. In New York City the wind reached a velocity of 84 miles an hour, and the depth of snow was about 16 inches, while the temperature fell to 15° above zero.

During the height of this storm I happened to be in a train between Philadelphia and New York. The distance between the two cities is 80 miles, which is usually done in two hours by a fast express; on this occasion the train took 24 hours. For 8 hours it was stalled by the snow and had to be dug out. Then an engine with a snow plough was sent on to cut a path; the train followed an hour later. Telegraph poles and wires were down in all directions. Signals were useless, being clogged or frozen. Other trains moving in an opposite direction passed—white apparitions that crept like gliding ghosts. It was a spectacle not to be forgotten, and it was the worst blizzard since 1888.

C. DECKER.

New York, 65, West 50th Street.

HEAVY RAINFALL IN SURREY DURING FEBRUARY AND MARCH.

THE rainfall at Haslemere during February and March has been so great and so persistent that I venture to send you some particulars. *Symons's Meteorological Magazine* for March shows only three places in England, viz., Seathwaite, Ashburton and Keswick, with a greater rainfall for February than that at Haslemere. Haslemere is situate on the southern slope of Hindhead (893 feet) and has an altitude of about 550 feet; the sea is about 30 miles further to the south. It thus has a high rainfall; the average (22 years) is 35·57 in. at Hazelhurst.

The following figures give the rain in 1914 as compared with average:—

	1914.		Average.
February	7·11 in.	.....	2·55 in.
March.....	6·04 in.	.....	2·75 in.
Aggregate two months	13·15 in.	.....	5·30 in.

The highest previous aggregate of a consecutive February and March was 9·93 in. (1897). For this purpose I have examined the Penfold records which extend the period searched to cover about 40 years.

There were rainspells, February 6th to 23rd, 18 days, 7·05 in.; February 28th to March 15th, 16 days, 3·68 in.

Highest previous February rain, 7·89 in. in 1900.

Highest previous March rain, 5·75 in. (1887), 5·74 in. (1909) and 5·50 in. (1912).

THOMAS P. NEWMAN.

Hazelhurst, Haslemere, Surrey.

A NARROW SQUALL.

THE Royal Meteorological Society Phenological Committee have received from Mr. Alfred L. Holgreaves, of Hepple, Northumberland, the following note, which, though not adapted for our report, seems worth passing on to you:—

"On 19th July, 1913, a narrow strip of wind 1½ ft. wide, drove through a hedge, lifting newly cut hay 60 yards high, proceeded through a tree with great violence, blowing off the leaves of a hedge and tree, and upset a hay-cock in an adjoining field. It lasted some 10 minutes and was accompanied by great noise. I was informed by an old inhabitant such occurrences were frequent at Coquet Head in the Cheviots. I doubt they are all as narrow as this was."

J. EDMUND CLARK.

Asgarth, Riddlesdown Road, Purley, Surrey, 18th March, 1914.

THAMES VALLEY RAINFALL — MARCH, 1914.

Symons's Meteorological Magazine.

Watershed of River Thames above Teddington, and River Lee above Feildes Weir.

Rainfall Stations reporting
Isohyetals.

THE RAINFALL OF SOUTHERN SOUTH AMERICA.

By Herbert L. Solyom.

Within the limited area of extra-tropical South America we find such a variety of rainfall conditions with the cause of each so definitely marked that the region under consideration might well be used to illustrate almost all the well recognised types.

That part of the continent has the general form of a right-angled triangle with the shorter leg on the tropic of Capricorn, the longer leg along the west coast and the hypotenuse along the east coast. The lofty Andean mountain ranges run from north to south near the west coast, and the Brazilian coast ranges under various names extend south-westward almost to the mouth of the Rio de la Plata, while between the two and on the southward to Tierra del Fuego stretch substantially level plains interrupted by one or two minor mountain ranges.

There are two great air currents in this region, a north-easterly one from the tropical part of the Atlantic, and a westerly one from the temperate section of the Pacific. The former is part of the circulation around the South Atlantic high-pressure area and the latter part of the general westerly wind between the South Pacific high and the Bellingshausen Sea low. Each of these currents is forced upward by the mountains near the coast and in consequence precipitates a great deal of its moisture as orographic rainfall and descends on the other side with a considerably diminished vapour content. The north-east current being the warmer has the greater carrying capacity, and the mountains along the east coast are considerably lower than those of the west coast, so that we are not surprised to find that even after supplying a heavy rainfall on the Brazilian coast it penetrates the continent as a damp wind, while the west wind from the Pacific loses practically all of its moisture on the Chilean slope of the Andes and the highlands of western Patagonia and reaches the plains as a dry wind. Though this west wind is at a low temperature, and consequently has but a small capacity for moisture, its mean velocity is great, so that in a given time it may bring in almost as much water vapour as the highly charged but more slowly moving north-east wind from the tropical Atlantic.

During the winter months (May to September) a low pressure area is developed along the Chilean coast from latitude 38° northward and a high pressure area over the interior plains, about latitude 37°. Between these two a north or north-north-west wind is set up which, being warmer than the general west wind, naturally carries more moisture and produces more rainfall. We get, therefore, a winter rainfall maximum in central Chile and a winter rainy season in northern Chile, while even in the far south an increased barometric gradient from north to south gives greater velocity to the prevailing

west winds and consequently results in a slightly greater precipitation in winter than in summer.

In marked distinction to this is the rainfall in northern and north-eastern Argentina, where the north-easterly winds encounter the east slope of the Andean ranges. Here we find a pronounced low pressure area developed during the summer (October to March). This produces a rising current throughout the piedmont region causing not only an intensification of the north-east wind, but an additional northerly indraught from the warm and moist central portion of Brazil. The result is a heavy summer rainfall followed by a long dry winter season during which the principal wind is a föhnlike current coming out from a winter anticyclone in the plateau region.

At frequent intervals during the summer fragments of the above mentioned piedmont low detach themselves from the principal area, and move across the continent in an easterly or north-easterly direction deflecting the normal north-east current into clockwise cyclonic spirals. These moving cyclones are the chief cause of rain in the north-eastern part of the region we are considering and their influence is felt as far south as Cape Corrientes (latitude 38° S.), and as far west as the Cordoba mountains in longitude 65° W. Another type of cyclone which contributes to the rainfall of eastern Argentina, Uruguay and southern Brazil, is one which appears first in the tropical interior of the continent and moves successively south-west, south and south-east disappearing in the Atlantic about latitude 35° S. These are primarily winter phenomena but have been observed as early as April and as late as October. The rain they cause is general and heavy. One more cause of precipitation remains to be noted. The anticyclones which follow one another from west to east in rapid succession around the high-pressure belt of the southern hemisphere cross the South American continent diagonally from about 40° S. on the west coast to about 32° or 35° S. on the east coast. The heavy outflowing air from these centres seems to run under the warmer and moister air overlying Uruguay and the south-east Argentine provinces and lift it. On the forward edge of the disturbance this occurs so rapidly that the moisture is condensed and precipitated giving rise to a fringe of showers around the north-east perifery of the anticyclone. The anticyclonic showers are common between latitudes 30° and 40° S., and longitudes 55° and 65° W., and occur at all seasons of the year.

The rainfall in the east of the continent and that in southern Chile are substantially uniform throughout the year though in the former it shows a slight summer maximum and in the other a slight winter maximum. There is however considerable variation from year to year. In northern Chile and north-western Argentina on the other hand there are distinct rainy and dry seasons, the rainy season being winter in the former case and summer in the latter, but the variation from year to year is not great except in the arid regions where a

single heavy shower may constitute 75 per cent. of the total rainfall for five or six years.

It will thus be seen that the north-east current above referred to supplies the moisture for the rain in Uruguay, southern Brazil and northern Argentina and in the narrow strip in the Andean highlands of northern Chile where snow and rain occur. The westerly Pacific wind supplies all of Chile with the above exception and the western half of Patagonia. Between the regions of the Atlantic and the Pacific rains stretches a semiarid strip in the shape of a long, narrow wedge with the point on the east coast near latitude 48°, and the base in the extreme north of Chile. The centre line crosses the Andes in about latitude 33°. In this region such rains as do occur affect very limited areas and are due to purely local disturbances of the atmospheric equilibrium

INTERNATIONAL BALLOON ASCENTS.

By W. H. DINES, F.R.S.

May 4th, 1911.

Starting Point.	Country.	A (H_c.) miles.	B (T_c.) ° F.	C miles.	D ° F.	E miles.	F
Manchester	England ..	6·9	—65	9·4	—66	103	S.E.
Pyrton Hill 7 a.m.	England ..	6·5	—61	8·2	—63	57	E. by S.
Pyrton Hill 7 p.m.	England ..	—	—	6·6	—65	—	E.N.E.
Lindenberg	Germany..	7·4	—76	9·7	—?	37	N.N.E.
Paris	France ...	7·1	—77	8·8	—75	66	E. by N.
Strassburg.....	Germany..	7·2	—80	9·4	—64	22	E.N.E.
Munich	„ ..	7·3	—72	8·6	—63	6	N.
Pavia	Italy	7·5	—81	9·3	—78	15	S.W. by S.
Pavlovsk	Russia	6·4	—64	7·1	—62	17	S.E.
Nishni Olchedaeff	„ ..	6·6	—83	7·0	—80	35	N.N.W.

A Height in miles of commencement of isothermal column.
B Temperature, F°., at bottom of column.
C Greatest height of reliable record in miles.
D Temperature, F°., at greatest height.
E Distance in miles of point where balloon fell.
F Bearing of falling point from starting point.

A deep depression was moving rapidly toward the Norwegian Coast, while the barometer was high to the east of the Baltic and over Spain.

The figures do not show any great departure from the average values for the date.

RAINFALL TABLE FOR MARCH, 1914.

STATION.	COUNTY.	Lat. N.	Long. W. [*E.]	Height above Sea. ft.	RAINFALL OF MONTH. Aver. 1875—1909. in.	1914. in.
		° ′	° ′			
Camden Square	*London*	51 32	0 8	111	1·70	4·51
Tenterden	*Kent*	51 4	*0 41	190	1·95	5·13
Arundel (Patching)	*Sussex*	50 51	0 27	130	1·95	5·19
Fawley (Cadland)	*Hampshire*	50 50	1 22	52	2·17	5·31
Oxford (Magdalen College)	*Oxfordshire*	51 45	1 15	186	1·45	3·64
Wellingborough (Croyland Abbey)	*Northampton*	52 18	0 41	174	1·69	2·65
Shoeburyness	*Essex*	51 31	*0 48	13	1·19	4·23
Bury St. Edmunds (Westley)	*Suffolk*	52 15	*0 40	226	1·71	4·16
Geldeston [Beccles]	*Norfolk*	52 27	*1 31	38	1·57	3·50
Polapit Tamar [Launceston]	*Devon*	50 40	4 22	315	2·74	7·92
Rousdon [Lyme Regis]	,,	50 41	3 0	516	2·30	5·15
Stroud (Upfield)	*Gloucestershire*	51 44	2 13	226	2·01	3·81
Church Stretton (Wolstaston)	*Shropshire*	52 35	2 48	800	2·19	3·66
Coventry (Kingswood)	*Warwickshire*	52 24	1 30	340	1·89	2·51
Boston	*Lincolnshire*	52 58	0 1	11	1·47	2·54
Worksop (Hodsock Priory)	*Nottinghamshire*	53 22	1 5	56	1·70	1·79
Macclesfield	*Cheshire*	53 15	2 7	501	2·50	4·83
Southport (Hesketh Park)	*Lancashire*	53 39	2 59	38	2·11	3·27
Arncliffe Vicarage	*Yorkshire, W.R.*	54 8	2 6	732	5·17	7·70
Wetherby (Ribston Hall)	,, ,,	53 59	1 24	130	1·92	2·53
Hull (Pearson Park)	,, *E.R.*	53 45	0 20	6	1·84	2·15
Newcastle (Town Moor)	*Northumberland*	54 59	1 38	201	2·10	2·08
Borrowdale (Seathwaite)	*Cumberland*	54 30	3 10	423	10·63	14·11
Cardiff (Ely)	*Glamorgan*	51 29	3 13	53	2·89	7·06
Haverfordwest	*Pembroke*	51 48	4 58	90	3·16	5·57
Aberystwyth (Gogerddan)	*Cardigan*	52 26	4 1	83	3·04	6·32
Llandudno	*Carnarvon*	53 20	3 50	72	2·13	3·12
Cargen [Dumfries]	*Kirkcudbright*	55 2	3 37	80	3·33	5·58
Marchmont House	*Berwick*	55 44	2 24	498	2·64	3·47
Girvan (Pinmore)	*Ayr*	55 10	4 49	207	3·62	6·66
Glasgow (Queen's Park)	*Renfrew*	55 53	4 18	144	2·61	4·10
Inveraray (Newtown)	*Argyll*	56 14	5 4	17	5·41	6·89
Mull (Quinish)	,,	56 34	6 13	35	4·28	3·92
Dundee (Eastern Necropolis)	*Forfar*	56 28	2 57	199	2·06	3·30
Braemar	*Aberdeen*	57 0	3 24	1114	2·87	4·36
Aberdeen (Cranford)	,,	57 8	2 7	120	2·65	3·25
Cawdor	*Nairn*	57 31	3 57	250	2·35	2·56
Fort Augustus (S. Benedict's)	*E. Inverness*	57 9	4 41	68	3·79	2·19
Loch Torridon (Bendamph)	*W. Ross*	57 32	5 32	20	7·29	5·16
Dunrobin Castle	*Sutherland*	57 59	3 56	14	2·64	4·20
Wick	*Caithness*	58 26	3 6	77	2·24	3·02
Killarney (District Asylum)	*Kerry*	52 4	9 31	178	4·51	8·87
Waterford (Brook Lodge)	*Waterford*	52 15	7 7	104	2·64	3·83
Nenagh (Castle Lough)	*Tipperary*	52 54	8 24	120	2·99	4·75
Ennistymon House	*Clare*	52 57	9 18	37	3·24	6·37
Gorey (Courtown House)	*Wexford*	52 40	6 13	80	2·28	3·74
Abbey Leix (Blandsfort)	*Queen's County*	52 56	7 17	532	2·59	4·40
Dublin (Fitz William Square)	*Dublin*	53 21	6 14	54	1·98	2·10
Mullingar (Belvedere)	*Westmeath*	53 29	7 22	367	2·64	3·93
Crossmolina (Enniscoe)	*Mayo*	54 4	9 16	74	4·36	6·81
Cong (The Glebe)	,,	53 33	9 16	112	3·80	5·83
Collooney (Markree Obsy.)	*Sligo*	54 11	8 27	127	3·33	5·38
Seaforde	*Down*	54 19	5 50	180	2·84	4·73
Bushmills (Dundarave)	*Antrim*	55 12	6 30	162	2·73	4·07
Omagh (Edenfel)	*Tyrone*	54 36	7 18	280	2·98	5·44

RAINFALL TABLE FOR MARCH, 1914—*continued.*

RAINFALL OF MONTH (*con.*)					RAINFALL FROM JAN. 1.					
Diff. from Av. in.	% of Av.	Max. in 24 hours. in.	Max. in 24 hours. Date.	No. of Days	Aver. 1875–1909. in.	1914. in.	Diff. from Aver. in.	% of Av.	Mean Annual 1875–1909. in.	STATION.
+2·81	265	·72	8	25	5·19	7·43	+2·24	143	25·11	Camden Square
+3·18	264	·95	19	24	5·99	9·58	+3·59	160	27·64	Tenterden
+3·24	266	·67	9	22	6·71	9·91	+3·20	148	30·48	Patching
+3·14	245	·80	10	26	7·20	10·25	+3·05	142	31·87	Cadland
+2·19	251	·60	8	28	4·85	5·78	+ ·93	119	24·58	Oxford
+ ·96	157	·42	7	24	5·27	4·67	— ·60	89	25·17	Croyland Abbey
+3·04	355	·92	25	25	3·71	5·95	+2·24	160	19·28	Shoeburyness
+2·45	243	·53	9	22	5·00	8·06	+3·06	161	25·40	Westley
+1·93	223	·52	9	24	4·51	6·66	+2·15	148	23·73	Geldeston
+5·18	289	·93	8	29	9·28	14·67	+5·39	158	38·27	Polapit Tamar
+2·85	224	·76	8	25	7·74	9·85	+2·11	127	33·54	Rousdon
+1·80	190	·38	8	24	6·46	7·49	+1·03	116	29·81	Stroud
+1·47	167	·54	7	22	6·87	7·50	+ ·63	109	32·41	Wolstaston
+ ·62	133	·36	7	22	6·12	4·85	—1·27	79	28·98	Coventry
+1·07	173	·30	7	25	4·54	5·00	+ ·46	110	23·35	Boston
+ ·09	105	·25	11	20	5·04	3·73	—1·31	74	24·46	Hodsock Priory
+2·33	193	·66	24	26	7·46	9·34	+1·88	125	34·73	Macclesfield
+1·16	155	·44	5	25	6·73	6·85	+ ·12	102	32·70	Southport
+2·53	149	1·23	30	27	16.31	20·32	+4·01	125	61·49	Arncliffe
+ ·61	132	·45	27	19	5·52	5·17	— ·35	94	26·87	Ribston Hall
+ ·31	117	·48	11	24	5·32	4·75	— ·57	89	26·42	Hull
— ·02	99	·41	15	25	5·63	5·41	— ·22	96	27·94	Newcastle
+3·48	133	1·32	13	27	35·03	47·38	+12·35	135	129·48	Seathwaite
+4·17	244	·98	11	29	9·61	12·98	+3·37	135	42·28	Cardiff
+2·41	176	·60	11	24	11·27	13·01	+1·74	115	46·81	Haverfordwest
+3·28	208	·75	20	27	10·04	14·88	+4·84	148	45·46	Gogerddan
+ ·99	146	·40	15	20	6·75	7·83	+1·08	116	30·36	Llandudno
+2·25	168	·96	13	25	10·85	16·94	+6·09	156	43·47	Cargen
+ ·83	132	·52	15	20	7·19	7·43	+ ·24	103	33·76	Marchmont
+3·04	184	·71	1	24	12·27	17·43	+5·16	142	49·77	Girvan
+1·49	157	·48	30	21	8·84	11·03	+2·19	125	35·97	Glasgow
+1·48	127	·70	2	25	18·46	23·39	+4·93	127	68·67	Inveraray
— ·36	92	·58	2	23	14·28	16·44	+2·16	115	56·57	Quinish
+1·24	160	·69	20	21	5·98	7·18	+1·20	120	28·64	Dundee
+1·49	152	·43	13, 14	23	8·34	11·46	+3·12	138	34·93	Braemar
+ ·60	123	·42	23	21	7·37	7·21	— ·16	98	32·73	Aberdeen
+ ·21	109	·66	2	11	6·69	6·25	— ·44	93	29·33	Cawdor
—1·60	58	·35	5	21	13·57	10·29	—3·28	76	44·53	Fort Augustus
—2·13	71	·65	17	23	24·24	28·30	+4·06	117	83·93	Bendamph
+1·56	159	·63	2	21	7·97	9·65	+1·68	121	31·90	Dunrobin Castle
+ ·78	135	·39	24	26	6·95	7·52	+ ·57	108	29·88	Wick
+4·36	197	1·01	28	31	15·44	24·86	+9·42	161	54·81	Killarney
+1·19	145	·86	28	23	9·60	11·38	+1·78	119	39·57	Waterford
+1·76	159	·52	3	25	9·76	14·18	+4·42	145	39·43	Castle Lough
+3·13	196	·57	13	29	10·98	17·71	+6·73	161	46·52	Ennistymon
+1·46	164	·87	28	25	8·22	10·07	+1·85	123	34·99	Courtown Ho.
+1 81	170	·58	28	25	8·29	10·68	+2·39	129	35·92	Abbey Leix
+ ·12	106	·24	28	26	6·05	5·58	+ ·47	92	27·68	Dublin
+1·29	149	·45	10, 13	25	8·41	10·30	+1·89	122	36·15	Mullingar
+2·45	156	·64	17	30	13·91	19·06	+5·15	137	52·87	Enniscoe
+2·03	153	·80	28	28	12·31	18·88	+6·57	154	48·90	Cong
+2·05	162	·42	1	27	10·40	14·47	+4·07	139	42·71	Markree
+1·89	167	1·00	28	23	9·06	10·21	+1·15	113	38·91	Seaforde
+1·34	149	·54	14	25	8·48	11·09	+2·61	131	37·56	Dundarave
+2·46	182	·54	11	28	9·12	13·39	+4·27	147	39·38	Omagh

SUPPLEMENTARY RAINFALL, MARCH, 1914.

Div.	STATION.	Rain inches.	Div.	STATION.	Rain inches.
II.	Warlingham, Redvers Road..	5·84	XI.	Lligwy	2·69
,,	Ramsgate	4·24	,,	Douglas	5·51
,,	Hailsham	5·88	XII.	Stoneykirk, Ardwell House...	4·51
,,	Totland Bay, Aston House...	5·45	,,	Dalry, The Old Garroch.....	10·32
,,	Stockbridge, Ashley..	4·68	,,	Beattock, Kinnelhead	8·21
,,	Grayshott	5·30	,,	Langholm, Drove Road	6·19
III.	Harrow Weald, Hill House...	4·46	XIII.	Meggat Water, Cramilt Lodge	6·54
,,	Caversham, Rectory Road ...	4·24	,,	North Berwick Reservoir.....	...
,,	Pitsford, Sedgebrook.....	2·63	,,	Edinburgh, Royal Observaty.	2·84
,,	Woburn, Milton Bryant.....	3·97	XIV.	Maybole, Knockdon Farm ...	3·36
,,	Chatteris, The Priory.....	2·95	XV.	Ballachulish House	5·22
IV.	Elsenham, Gaunts End	4·05	,,	Campbeltown, Witchburn ..	5·37
,,	Colchester, Hill Ho., Lexden	3·94	,,	Holy Loch, Ardnadam.....	8·66
,,	Ipswich, Rookwood, Copdock	4·48	,,	Islay, Eallabus	4·94
,,	Blakeney.....	2·27	,,	Tiree, Cornaigmore	3·88
,,	Swaffham	3·30	XVI.	Dollar Academy	4·36
V.	Bishops Cannings	4·51	,,	Balquhidder, Stronvar.....	8·19
,,	Wimborne, St. John's Hill ...	5·58	,,	Glenlyon, Meggernie Castle..	6·82
,,	Ashburton, Druid House.. ...	8·99	,,	Blair Atholl	4·23
,,	Cullompton	6·60	,,	Coupar Angus	3·45
,,	Lynmouth, Rock House	7·75	,,	Montrose, Sunnyside Asylum.	3·65
,,	Okehampton, Oaklands.....	9·93	XVII.	Alford, Lynturk Manse	3·46
,,	Hartland Abbey.....	5·73	,,	Fyvie Castle	3·55
,,	Probus, Lamellyn.....	5·82	,,	Keith Station	3·42
,,	North Cadbury Rectory.....	5·34	XVIII.	Rothiemurchus	2·05
VI.	Clifton, Pembroke Road.....	4·82	,,	Loch Quoich, Loan	11·60
,,	Ross, The Graig	3·05	,,	Drumnadrochit	2·79
,,	Shifnal, Hatton Grange.....	2·39	,,	Skye, Dunvegan	3·81
,,	Droitwich.....	2·44	,,	Lochmaddy Bayhead	5·30
,,	Blockley, Upton Wold.....	3·73	,,	Glencarron Lodge	6·09
VII.	Market Overton.....	2·88	XIX.	Invershin	3·27
,,	Market Rasen	1·70	,,	Melvich	3·98
,,	Bawtry, Hesley Hall	1·33	,,	Loch Stack, Ardchullin	6·93
,,	Derby, Midland Railway.....	2·27	XX.	Skibbereen Rectory	7·49
,,	Buxton	5·40	,,	Dunmanway, The Rectory ..	8·73
VIII.	Nantwich, Dorfold Hall	3·45	,,	Glanmire, Lota Lodge, No. 1	5·21
,,	Chatburn, Middlewood	4·85	,,	Mitchelstown Castle.....	5·64
,,	Cartmel, Flookburgh	5·04	,,	Darrynane Abbey.....	8·23
IX.	Langsett Moor, Up. Midhope	4·46	,,	Clonmel, Bruce Villa	4·37
,,	Scarborough, Scalby	3 02	,,	Newmarket-on-Fergus, Fenloe	4·31
,,	Ingleby Greenhow	2·26	XXI.	Laragh, Glendalough	6·74
,,	Mickleton	3·20	,,	Ballycumber, Moorock Lodge	3·06
X.	Bellingham, High Green Manor	3·74	,,	Balbriggan, Ardgillan	2·07
,,	Ilderton, Lilburn Cottage ...	2·96	XXII.	Woodlawn	5·53
,,	Keswick, The Bank.....	6·15?	,,	Westport, St. Helens	5·10
XI.	Llanfrechfa Grange	4·77	,,	Dugort, Slievemore Hotel ...	7·35
,,	Treherbert, Tyn-y-waun	13·57	,,	Mohill Rectory	5·76
,,	Carmarthen, The Friary	6·12	XXIII.	Enniskillen, Portora.....	5·66
,,	Castle Malgwyn [Llechryd]...	4·65	,,	Dartrey [Cootehill]	4·60
,,	Crickhowell, Tal-y-maes.....	6·60	,,	Warrenpoint, Manor House ..	4·58
,,	New Radnor, Ednol	5·32	,,	Banbridge, Milltown	...
,,	Birmingham WW., Tyrmynydd	9·74	,,	Belfast, Cave Hill Road	4·21
,,	Lake Vyrnwy	...	,,	Glenarm Castle..... ...	5·62
,,	Llangyhanfal, Plâs Draw.....	2·80	,,	Londonderry, Creggan Res...	5 00
,,	Dolgelly, Bryntirion.....	9·26	,,	Dunfanaghy, Horn Head ...	4·57
,,	Bettws-y-Coed, Tyn-y-bryn...	...	,,	Killybegs	8·04

METEOROLOGICAL NOTES ON MARCH, 1914.

ABBREVIATIONS.—Bar. for Barometer; Ther. for Thermometer; Temp. for Temperature; Max. for Maximum; Min. for Minimum; T for Thunder; L for Lightning; TS for Thunderstorm; R for Rain; H for Hail; S for Snow; F for number of days Frost in Screen; f on Grass.

LONDON, CAMDEN SQUARE.—The wettest March in the 57 years' record and with the greatest duration of R of any month, but October, 1882, in the past 34 years (see p. 50). On 7th—9th the R amounted to 1·65 in,, and the duration to 37·5 hours. Mean temp. 44°·2 or 2°·1 above the average. Duration of sunshine 78·5* hours, and of R 102·4 hours. Evaporation ·52 in. Shade max. 65°·5 on 31st; min. 28°·4 on 11th and 22nd. F 5, f 15.

TENTERDEN.—The wettest March for over 50 years. Duration of sunshine 108† hours. Shade max. 63°·5 on 31st; min. 28°·5 on 11th. F 5, f 16.

TOTLAND BAY.—The wettest March known here. Mean temp. 45°·1. Duration of sunshine 107·2* hours. Shade max. 65°·2 on 31st, the highest March reading in 28 years; min. 33°·3 on 22nd. F 0, f 8.

MILTON BRYAN.—A wretched month with R 1·13 in. above the average. Shade max. 64°0 on 31st; min. 25°0 on 11th. F 14.

IPSWICH, COPDOCK.—A constant succession of cyclonic disturbances, but little real cold. Mean temp. 43°·3. Duration of sunshine 106·8* hours, and of R 101 hours. Shade max. 64°·5 on 31st; min. 29°·8 on 11th. F 4, f 15.

POLAPIT TAMAR.—The heaviest R for March in 45 years. A rain spell lasted from February 26th to March 26th, 29 days. Shade max. 61°·1 on 31st; min. 28°·0 on 22nd. F 4, f 11.

NORTH CADBURY.—Very stormy month but not a cold one. Harsh and disagreeable from 9th onward, until 31st which was a beautiful warm day. Shade max. 63°·0 on 31st; min. 27°·0 on 11th. F 5, f 15.

HODSOCK PRIORY.—Shade max. 60°·2 on 31st; min. 27°·7 on 10th F 9, f 17

SOUTHPORT.—Duration of sunshine 105·0* hours, and of R 89·9 hours. Mean temp. 43°·5 or 2°·2 above average, Evaporation ·73 in. Shade max. 60°·0 on 30th; min. 31°·0 on 20th and 28th. F 2, f 14.

HULL.—A continuation generally of the mild weather of February, but more frequent R and low bar. readings. Duration of sunshine 72·0* hours. Shade max. 61°·0 on 31st; min. 29°·0 on 11th. F 3, f 14.

CARMARTHEN.—Very wet month all through. Every kind of vegetation backward, and garden and corn setting late because of wet ground.

LLANDUDNO.—Shade max. 57° on 29th and 30th; min. 33° on 20th and 28th.

MARCHMONT.—Duration of sunshine 94·1 hours on 24 days. Shade max. 58° on 31st; min. 24° on 10th. F 12, f 18.

ABERDEEN.—Cold and wet, with high winds from W. and S.W. Shade max. 58° on 31st; min. 22° on 9th. F 21, f 23.

FORT AUGUSTUS.—Shade max. 55°·4 on 30th; min. 21°·4 on 9th. F 12.

LOCH STACK.—Duration of sunshine 86·4* hours.

DARRYNANE ABBEY.—The wettest March in 35 years' record. There have been 69 successive rain days from January 22nd to March 31st.

DUBLIN.—An unsettled, wet and windy month. Mean temp. 43°·9 or 0°·4 above the average. A great preponderence of S.W., W. and S. winds. Shade max. 59°·0 on 31st; min. 29°·8 on 20th. F 4, f 8.

MOHILL.—A rain spell of 57 days lasted from January 23rd to March 20th. Shade max. 59° on 31st; min. 26° on 10th. F 14, f 15.

OMAGH.—A rain spell of 55 days with 10·70 in. of R lasted from January 23rd to March 18th. Shade max. 57° on 29th and 31st; min. 26° on 10th. F 9.

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* Campbell-Stokes. † Jordan.

Climatological Table for the British Empire, October, 1913.

STATIONS. (*Those in italics are South of the Equator.*)	Absolute. Maximum. Temp.	Date.	Absolute. Minimum. Temp.	Date.	Average. Max.	Min.	Dew Point.	Humidity. 0-100	Absolute. Max. in Sun.	Min. on Grass.	Total Rain. Depth.	Days.	Aver. Cloud.
	°		°		°	°	°		°	°	inches		
London, Camden Square	70·3	2	36·7	25	61·5	47·2	49·7	91	105·4	35·2	3·11	15	7·4
Malta	80·2	9	59·9	16	78·2	67·1	...	76	147·0		12·81	4	1·1
Lagos	..	...	...	...	...	...	..	..	...	...	...	...	...
Cape Town	86·9	16	45·6	3	69·5	52·5	51·7	71	...	...	1·50	12	5·1
Natal, Durban ...	75·0	29	54·0	24	69·6	61·5	60·8	77	...	...	5·06	17	7·0
Johannesburg	80·9	11	41·0	16	72·2	51·1	45·7	64	146·2	38·8	4·59	12	3·5
Mauritius	85·4	17	58·2	9	81·4	63·7	62·5	73	150·9	51·4	1·04	14	4·7
Bloemfontein ...	87·6	28	36·3	24	75·9	48·9	42·5	50	...	...	1·27	4	3·2
Calcutta...	90·8	7	65·8	29	86·8	73·6	72·7	79	...	61·5	6·64	6	4·2
Bombay... ...	91·0	23	73·3	28	88·4	77·1	75·1	79	140·0	65·8	2·35	5	3·3
Madras	95·1	16	69·1	31	88·6	74·6	73·2	81	142·4	67·1	28·28	18	5·7
Colombo, Ceylon ...	88·0	23	71·6	23	85·5	74·9	73·7	81	162·2	67·3	6·46	18	7·2
Hongkong	85·5	8	67·9	17	80·3	72·2	63·4	64	...	...	3·55	6	3·5
Sydney	92·0	22	49·9	18	73·3	58·3	53·2	67	145·1	36·6	1·14	13	5·2
Melbourne	88·3	10	39·1	9	67·7	49·3	46·8	63	139·9	33·2	1·47	14	6·3
Adelaide	96·9	9	42·0	31	74·8	53·8	49·7	57	147·0	35·8	2·45	10	4·9
Perth	90·4	1	44·0	10	67·4	51·9	49·4	68	150·9	39·8	3·31	14	4·7
Coolgardie	92·8	8	42·4	26	75·8	50·8	44·4	46	152·8	39·6	1·34	7	3·6
Hobart, Tasmania ..	84·5	10	37·0	16	64·7	47·3	43·0	58	135·0	34·1	1·94	15	6·7
Wellington ...	66·2	31	35·4	4	59·3	50·4	49·0	81	130·0	34·0	4·86	22	8·3
Auckland	72·0	30	43·5	10	63·0	52·0	51·0	78	135·0	41·0	3·69	15	6·5
Jamaica, Kingston ..	92·9	20	69·5	30	89·8	72·5	70·3	78	...	...	1·41	7	4·6
Grenada	87·0	sev.	71·0	25	84·1	74·4	...	82	136·0	...	10·98	21	5·0
Toronto	81·4	6	26·9	31	59·7	43·6	44·0	80	..	...	2·46	12	5·3
Fredericton	75·8	7	26·0	23	59·3	46·4	...	89	...	...	7·42	18	8·0
St. John, N.B. ...	69·3	3	13·2	31	59·6	50·2	51·0	87	...	...	5·95	19	8·0
Edmonton, Alberta ...	77·0	1	12·8	30	46·2	27·1	...	75	126·9	4·2	·40	9	6·3
Victoria, B.C.	62·2	2	35·0	5	54·4	43·1	45·7	88	...	...	3·63	15	6·2

MALTA.—On the 16th a cloud burst, in three hours 11·57 in. of R fell, the largest daily rainfall in 30 years.

Johannesburg.—Bright sunshine 266·0 hours.

Mauritius.—Mean temp. of air 0°·1 below, dew point 0°·9 above, and R ·24 in. below, averages. Mean hourly velocity of wind 9·2 miles, or 1·8 below average.

COLOMBO.—Mean temp. of air 80°·2, or 0°·2 above, of dew point 0°·3 below, and R 9·40 in. below, averages. Mean velocity of wind 4·6 miles per hour. TSS on three days.

HONGKONG.—Mean temp. of air 76°·1. Mean hourly velocity of wind 11·7 miles. Bright sunshine 266·9 hours.

Melbourne.—Mean temp. of air 1°·0 above, and R 1·17 in. below, averages.

Adelaide.—Mean temp. of air 2°·4 above, and R ·71 in. above, averages.

Perth.—Temp. of air 1°·3 below, and R above, averages.

Coolgardie.—Temp. of air 0°·3 below, and R ·5 in. above, averages.

Hobart.—Temp. of air 2°·1 above, and R ·30 in. below, averages.

Wellington.—Mean temp. of air 0°·7 above, and R ·65 in. above, averages. Bright sunshine 140 hours.

Auckland.—A seasonable month.